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(1) Tim
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January 28, 2002

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Air Protection Division (3AP12)

Director, Air and Waste Management Division
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Allegheny County Health Department
Bureau of Air Pollution Control
301 Thirty-ninth Street
Pittsburgh, PA 15201

SUBJECT: United States Steel Corporation - Clairton Coke Operations
Request for Applicability Determination
40 CFR 61 Subparts L and V

Dear Part 61 NESHAP Administrator:

The purpose of this correspondence is to obtain written agency concurrence that certain equipment at the Clairton coke by-product recovery plant is not subject to the control requirements of 40 CFR 61 Subparts L and V.

Facility Description

United States Steel Corporation (USSC), Clairton Coke Operations, located in Allegheny County, Pennsylvania, is the largest by-products coke plant in North America. Clairton operates twelve coke oven batteries and employs approximately 1,700 people.

Each day, Clairton uses more than 16,000 tons of coal to produce nearly 13,000 tons of metallurgical coke, 225 million cubic feet of coke oven gas, 145,000 gallons of crude coal tar, 55,000 gallons of light oil, 59 tons of anhydrous ammonia and 35 tons of elemental sulfur. Approximately 25% of the coke produced at Clairton is used in USSC-operated blast furnaces and the remaining 75% is sold on the commercial market to other blast furnace operators.

Background

Between 1999 and 2001 Clairton Coke Operations conducted an extensive compliance review of the coke by-products plant as a part of revising and updating the facility's Title V operating permit application. During the review, it was noted that the four tar decanter pitch trap process vessels in the Clairton by-product recovery

plant were not controlled for benzene under 40 CFR 61 Subpart L or VHAPs under 40 CFR 61, Subpart V. A review of the process parameters and the requirements of 40 CFR 61 Subparts L and V led USSC to believe that the Clairton tar decanter pitch traps may be required to be controlled for VHAP emissions under Subpart V.

As a result, Clairton submitted a Schedule M Compliance Plan to the Allegheny County Health Department (ACHD) on March 2, 2001 as a part of the revised Title V application. The Schedule M Compliance Plan, as submitted to ACHD, is attached to this correspondence as Attachment 1.

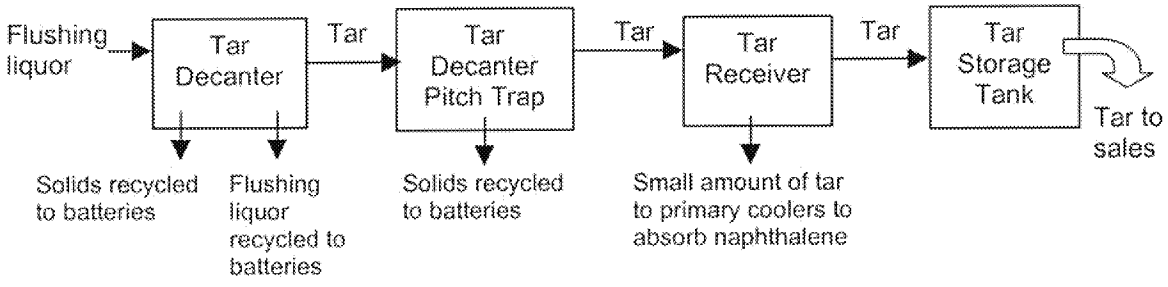
In conducting the engineering and regulatory investigations required by the compliance plan, USSC determined that its initial determination was incorrect and that the Clairton tar decanter pitch traps are not subject to the control requirements of potentially applicable NESHAP regulations. Subsequently, project development has been suspended pending the outcome of this determination request. The following information provides our rationale in determining that NESHAP control requirements do not apply.

Clairton Tar Decanter Pitch Trap Description

There are four identical tar decanter pitch traps at Clairton. The function of each tar decanter pitch trap is to mechanically separate ash, coal fines and coke fines from crude coal tar to improve product tar quality and to protect downstream equipment from excessive solids deposition and to prevent plugging of downstream heat transfer equipment.

The input material to each tar decanter pitch trap is the crude coal tar stream from a group of tar decanters. The intermediate product from each tar decanter pitch trap is product tar which is piped to a tar receiver which meets the definition of a tar storage tank under 40 CFR 61.131. After mechanical separation in the tar decanter pitch trap, solids are removed by a continuous drag rake (similar to those used in tar decanters) and recycled back into the coke oven batteries as carbon units. The entire vessel is closed to the atmosphere except for a small opening (less than 2.5 sq. ft. where the rake mechanism exits the vessel). Attachment 2 is a cross-sectional representation of a typical tar decanter pitch trap. Figure 1 below is a simple process flow diagram showing product and by-product flow:

Figure 1



All tar decanters, tar receivers and tar storage tanks are controlled for benzene emissions as required under 40 CFR 61 Subpart L. All tar decanter pitch traps are not controlled.

40 CFR 61 Subpart L Applicability

In order for a piece of equipment to be required to be controlled for benzene under Subpart L, it must either be a named affected source or include certain equipment intended to operate "in benzene service". Light oil sumps, naphthalene processing, final coolers and final cooler cooling towers are also subject to certain control requirements under Subpart L.

§61.132 of Subpart L requires benzene controls for the following equipment, which are all defined at 40 CFR 61.130:

- Tar decanters
- Flushing liquor circulation tanks
- Light oil condensers
- Light oil decanters
- Wash oil decanters
- Wash oil circulation tanks
- Tar storage tanks
- Tar intercepting sumps
- Benzene storage tanks
- BTX storage tanks
- Light oil storage tanks
- Excess ammonia liquor storage tanks

Subpart L also requires the following types of equipment intended to operate "in benzene service" to comply with the requirements of 40 CFR 61 Subpart V:

- Pumps
- Valves
- Exhausters

- Pressure relief devices
- Sampling connection systems
- Open-ended valves or lines
- Flanges or other connectors
- Control devices or systems required by §61.135

Subpart V requirements are triggered if certain equipment is first determined to be intended to operate "in benzene service" (see 40 CFR 61.135(a)).

Our rationale that the control requirements of 40 CFR 61 Subpart L do not apply to the Clairton tar decanter pitch traps is based on the answers to several questions:

Is a tar decanter pitch trap a named affected facility under Subpart L?

Each process vessel, storage tank and tar intercepting sump intended to be subject to the control requirements of this subpart are defined terms under 40 CFR 61.131. Since a tar decanter pitch trap processes tar, only the following named affected sources are considered in this correspondence since other named facilities do not process tar:

- Tar decanter
- Tar storage tank
- Tar intercepting sump

Does a tar decanter pitch trap meet the definition of a tar decanter?

Tar decanter is defined at 40 CFR 61.131 as:

> *"...any vessel, tank or container that functions to separate heavy tar and sludge from flushing liquor by means of gravity, heat or chemical emulsion breakers..."*

A tar decanter pitch trap is a vessel, tank or container, however, it does not separate tar and sludge from flushing liquor. It separates solids from tar. Also, it does not accomplish separation by gravity, heat or chemical emulsion breakers. It accomplishes separation by means of a mechanical screen. Therefore, a tar decanter pitch trap does not meet the definition of a tar decanter.

Due to the similarities between a tar decanter and a tar decanter pitch trap it should be noted that if a tar decanter pitch trap did fit the definition of a tar decanter, further controls would not be required since 40 CFR 61.132(a)(2)(ii) allows an opening in each tar decanter where the sludge conveyor exits the tar decanter. Since the sludge

conveyor opening is the only opening in the tar decanter pitch trap, further controls would not be required under 40 CFR 61 Subpart L.

Does a tar decanter pitch trap meet the definition of a tar storage tank?

Tar storage tank is defined at 40 CFR 61.131 as:

> *"...any vessel, tank, reservoir or other type of container used to collect or store crude tar..."*

A tar decanter pitch trap does not collect or store crude tar. In order to "collect or store" any material, according to common definition, the material must be allowed to accumulate over time. Since, at all times during normal operation, the influent flow rate is equal to the effluent flow rate, there is no collection or storage of crude tar occurring. Therefore, a tar decanter pitch trap does not meet the definition of a tar storage tank.

Does a tar decanter pitch trap meet the definition of a tar intercepting sump?

Tar intercepting sump is defined at 40 CFR 61.131 as:

> *"...any tank, pit or enclosure that serves to receive or separate tars and aqueous condensate discharged from the primary cooler..."*

The primary cooler receives raw coke oven gas from the batteries and discharges cooled gas to the exhauster and condensate to the primary cooler decanters A tar decanter pitch trap does not receive tar or condensate from the primary cooler at any time, therefore, a tar decanter pitch trap does not meet the definition of a tar intercepting sump.

Is a tar decanter pitch trap intended to operate "in benzene service"?

In benzene service is defined at 40 CFR 61.131 as:

> *"...a piece of equipment, other than an exhauster, that either contains or contacts a fluid (liquid or gas) that is at least 10 percent benzene by weight..."*

Since the drag rake opening in the Clairton tar decanter pitch traps could possibly constitutes an "open-ended line" (see §161.130(a) and the definition of "open-ended line" at 40 CFR 61.241), and, if the tar decanter pitch trap were intended to operate "in benzene service", the requirements of §61.134 and 40 CFR 61 Subpart V would apply. The

"fluid" contacting the tar decanter pitch trap is crude coal tar. Crude coal tar does not contain at least 10 percent benzene by weight. A typical benzene analysis of tar decanter pitch trap crude coal tar is attached as Attachment 3. Therefore, since the Clairton tar decanter pitch traps do not and are not intended to operate "in benzene service", the requirements of §61.134 and the requirements of 40 CFR 61 Subpart V triggered by 40 CFR 61.135(a) do not apply.

40 CFR 61 Subpart V Applicability

Due to the interrelationship of 40 CFR 61 Subparts L and V, certain aspects of Subpart V applicability were discussed in the previous section. Due to these interrelationships and the complex nature of both regulations, it is also necessary to further consider if the control requirements of Subpart V could possibly apply independent of Subpart L.

40 CFR 61.240 states that Subpart V applies to certain sources that are intended to operate "in volatile hazardous air pollutant (VHAP) service". "In VHAP service" is defined at 40 CFR 61.241 as:

> *"...a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant..."*

In that same section, "volatile hazardous air pollutant" is defined as:

> *"...a substance regulated under this part for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene is a VHAP. Vinyl chloride is a VHAP."*

Benzene is the only pollutant for which a standard for equipment leaks has been proposed and promulgated under Part 61 and which is present in detectable quantities at the Clairton tar decanter pitch traps. As explained above, the Clairton tar decanter pitch traps are not "in benzene service" because the tar does not contain at least 10 percent benzene. Because the Clairton tar decanter pitch traps are not "in benzene service" they are also not "in VHAP service". Therefore, the Clairton tar decanter pitch traps are not subject to 40 CFR 61 Subpart V because they are not "in VHAP service" as defined at 40 CFR 61.241.

Summary and Conclusion

Since a tar decanter pitch trap is not a named affected facility (i.e. process vessel, storage tank, tar intercepting sump, light oil sump, naphthalene processing, final cooler or final cooler cooling tower) under Subpart L, and, does not include equipment intended to operate "in benzene service" or "in VHAP service", the control requirements of 40 CFR 61 Subparts L and/or V cannot apply. Therefore, emission controls for benzene and/or VHAPs are not required.

Requested Action

United States Steel Corporation requests a written determination from U.S. EPA that the control requirements of 40 CFR 61 Subparts L and/or V do not apply to the four tar decanter pitch traps at the Clairton coke by-product recovery plant. Upon receipt of this written determination, United States Steel Corporation will withdraw its Title V compliance plan as submitted to ACHD on March 2, 2001.

We appreciate your assistance in this matter. Please contact me if you require further information or would like to discuss this matter in greater detail.

Very truly yours,

William S. Kubiak

Encl.
cc: Ed Wojciechowski (U.S. EPA Iron and Steel Liaison)
Coleen Davis (USSC Clairton)
Tishie Woodwell (USSC Law)

Attachment 1

U.S. Steel Clairton Works

Tar Decanter Pitch Traps
Schedule of Compliance
Schedule M

Compliance Plan Element	Milestone Date
1. Preliminary Application Engineering and choose trial solution.	September 30, 2001
2. Evaluate solution and revise schedule of compliance as appropriate.	March 31, 2002
3. Compliance demonstration – Dependent on solution	June 30, 2003

Tar Decanter Pitch Traps

Issue:

Federal NESHAP regulations require vapor control for sources that operate in Volatile Organic Hazardous Air Pollutant (VHAP) service. At the Clairton byproduct plant, it has been determined that tar decanter pitch traps are operated in VHAP service and are not controlled for VHAP emissions.

Citation:

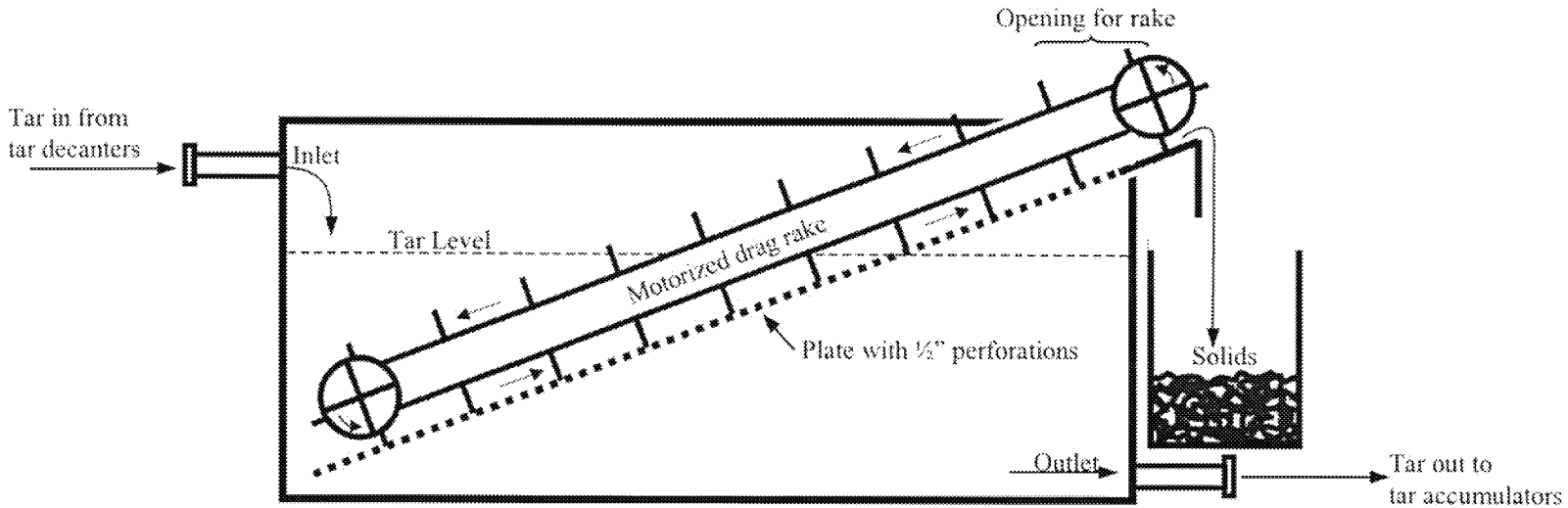
40 CFR 61, Subpart V - National Emission Standard for Equipment Leaks (Fugitive Emission Sources)

Compliance Plan Description:

The compliance plan provides for a period of time to conduct application engineering. Upon completion, an appropriate solution will be chosen and a trial conducted and implemented according to a schedule, which has not yet been developed. Possible solutions include the installation of a vapor capture system and fitting the traps with a vapor-tight seal.

Attachment 2

Typical Clairton Tar Decanter Pitch Trap



Section

Attachment 3

Antech Ltd.
One Triangle Lane
Export, PA 15632
(724) 733-1161

Waste Characterization: Purchase Order No. E81719
Clairton Plant
Antech Ltd. Project No. 00-4190

Parameter	CAS Number	Units	Sample Identification				
			0008-1881 #1 Unit Tar 1-6 Pt (8/16/00)	0008-1882 #1 Unit Tar 7-12 Pt (8/16/00)	008-1883 #2 Unit Tar 7-12 Pt (8/16/00)	0008-1884 #2 Unit Tar 1-6 Pt (8/16/00)	008-1885 #1 Unit Goober Pt (8/7/00)
Benzene	71-43-2	µg/kg	4000000	210000	900000	290000	43000
Benzene	71-43-2	percent	0.400%	0.021%	0.090%	0.029%	0.043%